

REMARKS/ARGUMENTS

The Office Action dated October 20, 2003, has been carefully considered. Applicant respectfully requests urges reconsideration in view of the following remarks.

The 35 U.S.C. § 102 Rejection

Claims 1-16 stand rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by Hayashida et al. This rejection is respectfully traversed.

According to the M.P.E.P., a claim is anticipated under 35 U.S.C. § 102(a), (b) and (e) only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.¹

Claims 1 and 9 are independent claims, with claims 2-8 and 10-16 respectively depending therefrom.

Claim 1 recites a stationary array of sensors and a scanning sensor. The stationary array of sensors is disposed at a first location and produces “a first array of measurement outputs *which are each associated with a sensor in the array.*” (Emphasis added). The scanning sensor is disposed at a second location and produces “a second array of measurement outputs *which are all associated with one or more sensors of the scanning sensor.*” Claim 1 further recites “means for synthesizing an array of measurement outputs by fusing the first and second arrays of measurement outputs.” (Emphasis added).

The invention of Claim 1 aims to correlate the measurements of the scanning sensor with those of the stationary array because in some circumstances, it is not possible to use the less

¹ Manual of Patent Examining Procedure (MPEP) § 2131. See also *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

expensive scanning array, due for example to the hostility of the environment, and therefore an expensive, multi-element stationary array must be deployed in its stead. Since re-calibration of the scanning sensor is relatively easy and can be performed once each scanning cycle, whereas re-calibration of the stationary array is much more difficult as each sensor element in the array is fixed in position, the invention contemplates fusing the measurements from these two different sensors in order to make their use together possible even though fundamentally they are of different construction and have different operational requirements. It will be appreciated that the definition of a scanning sensor is intended to encompass sensors that do not themselves move, but have some scanning elements which, for example in terms of optical devices, could include rotating or moving mirrors, prisms, and so forth. The language of Claim 1 has been amended to reflect this broader application of the term "scanning" by referring to "a second array of measurement outputs which are all associated with one or more sensors of the scanning sensor."

Hayashida, et al., by comparison, does not fuse the measurements from two different types of sensors, and in fact, arguably does not disclose two different sensors at all. Specifically, thickness gauge 6 to which the Office Action makes reference is probably NOT a scanning sensor in the sense relied upon in the present disclosure. The term "scanning" used in Hayashida, et al. likely refers to *electrical* scanning, rather than the mechanical or optical scanning of the present invention, and there is no indication to the contrary. In any case Hayashida, et al. does not disclose the use of two different types of sensors. It is simply not clear how gauge 6 of the prior art, and gauges 28, 29 and 30 are different from each other, if they are indeed different.

More importantly, Hayashida, et al. seeks to tackle the problem of correlating a sensor's measurement information with adjustment inputs, not with information from other sensors. Hence, Hayashida, et al.'s use of Kalman filters, well-known mathematical tools, is with respect

to correlations between the adjusting bolt 32 and the resultant changes as measured by gauges 28, 29 and 30. This is different from the use of the filters to correlate the measurements of two different types of sensors as presently claimed. Hayashida, et al. does not fuse measurements from "scanning" gauge 6 with those of gauges 28, 29 and 30. Thus even if gauge 6 could be properly construed as a scanning gauge in the sense of the invention, a point which is denied per the discussion above, the last limitation of Claim 1—"means for synthesizing an array of measurement outputs by *fusing the first and second arrays of measurement output.*" (emphasis added)—would still not be met because Hayashida, et al. does not fuse measurements from gauge 6 with those from gauges 28, 29, and 30.

Claim 9 has been amended to clearly distinguish between the two types of sensors used, doing so by reciting a stationary sensor and a non-stationary sensor. Again it will be appreciated that the definition of a non-stationary sensor is also intended to encompass sensors that do not themselves move, but have some scanning elements which, for example in terms of optical devices, could include rotating or moving mirrors, prisms, and so forth. Further, the arguments with respect to the patentability of Claim 1 over Hayashida, et al. are also applicable to Claim 9, and passage of Claims 1 and 9, along with Claims 2-8 and 10-16 dependent therefrom, to allowance is respectfully urged.

Conclusion

It is believed that this Amendment places the above-identified patent application into condition for allowance. Early favorable consideration of this Amendment is earnestly solicited.

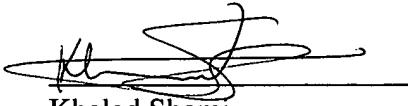
If, in the opinion of the Examiner, an interview would expedite the prosecution of this application, the Examiner is invited to call the undersigned attorney at the number indicated below.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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